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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/049,792

02/14/2002

Hironori Aoki

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06/16/2004

WARE FRESSOLA VAN DER SLUYS &  
ADOLPHSON, LLP  
BRADFORD GREEN BUILDING 5  
755 MAIN STREET, P O BOX 224  
MONROE, CT 06468

EXAMINER

DUONG, THOI V

ART UNIT

PAPER NUMBER

2871

DATE MAILED: 06/16/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/049,792

Applicant(s)

AOKI, HIRONORI

Examiner

Thoi V Duong

Art Unit

2871

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 03 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 29 March 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-3,5,6,8-13 and 15-18 ~~is~~/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-3,5,6,8-13 and 15-18 ~~is~~/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

### DETAILED ACTION

1. This office action is in response to the Response filed March 29, 2004.

Currently, claims 1-3, 5, 6, 8-13 and 15-18 are pending in this application. Note that claims 4, 7, 14 and 19-21 were previously cancelled.

#### ***Claim Rejections - 35 USC § 102***

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1-3, 5, 6, 8-12 and 15-18 are rejected under 35 U.S.C. 102(b) as being anticipated by Dohjo et al. (USPN 6,078,366).

Re claim 1, as shown in Figs. 1, 3, 5 and 13, Dohjo discloses an array substrate 100 comprising:

a display area (TFT region) in which pixel electrodes 131 are formed,  
a scanning line 111 formed of a low resistivity metal (col. 7, lines 16-27), said scanning line being arranged between the pixel electrodes 131,  
a signal line 110 formed of a high melting point metal such as Mo, Ta or its alloy (col. 7, lines 28-37), said signal line crossing over the scanning line 111 interposing an insulating layer 115 therebetween,  
a terminal 152 to which a scanning signal is applied, and

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an extended scanning line 125a for connecting the scanning line 111 with the terminal 152, said extended scanning line being formed only of the same conductive film as for said signal line 110,

wherein, re claim 6, the extended scanning line 125a is electrically connected to the scanning line 111 through contact holes 153, 154 at the neighborhood of the display area and electrically connected to the terminal 152 for the scanning signal through contact holes 155, 156 at the neighborhood of the terminal (see Figs. 1 and 3);

wherein, re claim 15, the scanning line 111 and the extended scanning line 125a are electrically connected via a conductive film of the same layer 131 as that for the pixel electrode;

wherein, re claim 17, the extended scanning line 125a is formed in a grid like shape at a region (Base section in Fig. 3) in which the scanning line and the extended scanning line are overlapped within a connecting portion between the scanning line and the extended scanning line; and

where, re claim 12, aluminum or aluminum alloy is used for material of the scanning line (col. 7, lines 16-27);

Re claims 2 and 3, as shown in Figs. 28 and 31, the array substrate further comprises:

an auxiliary capacitance line 113 arranged in parallel to the scanning line 111 (Fig. 28 and col. 23, lines 54-55),

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a collected auxiliary capacitance line (dotted line of storage capacitor-line connecting section 190 in Fig. 28) arranged in parallel to the signal line 110 and electrically connected to the auxiliary capacitance line 113,

a terminal to which a common signal is applied (at top left of Fig. 28), and  
an extended auxiliary capacitance line 125 for connecting the collected auxiliary capacitance line with the terminal for the common signal (Fig. 31), said extended auxiliary capacitance line being formed only of the same conductive film as for said signal line (col. 23, lines 54-64),

wherein, re claims 5 and 8, the collected auxiliary capacitance line and the extended auxiliary capacitance line are electrically connected via a conductive film 193 of the same layer as that for the pixel electrode (Fig. 31);

wherein, re claim 9, the extended auxiliary capacitance line 125 is electrically connected to the collected auxiliary capacitance line at the neighborhood of the display area through a contact hole 192 and electrically connected to the terminal for the common signal through a contact hole 194 at the neighborhood of the terminal;

wherein, re claim 10, the auxiliary capacitance line 113, the collected auxiliary capacitance line and the scanning line 111 are formed from the conductive film of same layer (col. 23, lines 42-45);

wherein, re claim 11, the collected auxiliary capacitance line and the extended scanning line are crossing interposing an insulating layer 117 therebetween (Fig. 31);  
and

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wherein, re claim 18, the extended auxiliary capacitance line 125 is formed in a grid like shape at a region 190 in which the collected auxiliary capacitance line and the extended auxiliary capacitance line are overlapped within a connecting portion between the collected auxiliary capacitance line and the extended auxiliary capacitance line (see Fig. 31).

Finally, re claim 16, Dohjo also discloses in another embodiment that the extended scanning line and the pixel electrodes are formed from the conductive film of same layer (col. 5, lines 27-45). Since the extended auxiliary capacitance line is formed at the same layer as the extended scanning line, the extended auxiliary capacitance line and the pixel electrodes are also formed from the conductive film of same layer.

***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over Dohjo in view of Sakata et al. (JP 11-284195).

Dohjo discloses an array substrate that is basically the same as that recited in claim 13 except that the material used for the scanning line is not nitridated aluminum or nitridated aluminum alloy. Sakata discloses a process in which impurity constituted of one of N, O, Si and C is added to an upper layer of a scanning line formed of pure aluminum or aluminum alloy to directly provide low contact resistance (paragraph 11).

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Thus, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the array substrate of Dohjo with the teaching of Sakata by using partly or wholly nitridated aluminum or partly or wholly nitridated aluminum alloy for the scanning lines so as to obtain a low contact resistance (see Abstract).

### ***Response to Arguments***

6. Applicant's arguments filed on March 29, 2004 have been fully considered but they are not persuasive.

Applicant argued that Dohjo does not "anticipate" claims 1-3, 5, 6, 8-12 and 15-18 because the high-melting point metal is not "necessarily present" in the Dohjo structure, where the electrodes can optionally comprises low-melting-point aluminum. The Examiner disagrees with Applicant's remarks because the Dohjo's reference meets every limitations recited in those claims, where a high melting point metal for the extended scanning line and the extended auxiliary scanning line is disclosed. Nowhere in the Dohjo's reference indicates that the high-melting point metal is not "necessarily present" in the Dohjo structure.

Re claim 17 and 18, nowhere in the claims shows that the grid-like shape is parallel, therefore, the point is moot.

Re claim 13, the Sakata's reference is employed for teaching nitridated aluminum or nitridated aluminum alloy used for the scanning lines to obtain a low contact resistance.

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Finally, Applicant's argued that, under section 103(c), Sakata is disqualified as prior art since the claimed invention, at the time the invention was made, "owned by the same person or subject to an obligation of assignment to the same person." The Examiner disagrees since the fact that the reference and the application have the same assignee is not, by itself, sufficient evidence. There must be a statement that the common ownership was "at the time the invention was made."

### ***Conclusion***

7. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thoi V. Duong whose telephone number is (571) 272-2292. The examiner can normally be reached on Monday-Friday from 8:30 am to 4:30 pm.



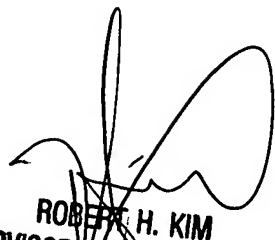
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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert Kim, can be reached at (571) 272-2293.

Thoi Duong



06/08/2004



**ROBERT H. KIM**  
**SUPERVISORY PATENT EXAMINER**  
**TECHNOLOGY CENTER 2800**